

**Occurrence of the Torroto Grunt,
Genyatremus cavifrons (Cuvier, 1830)
(Actinopterygii: Haemulidae) In The Canary Islands
(Eastern Atlantic Ocean)**

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ABSTRACT

One specimen of the Torroto grunt, *Genyatremus cavifrons* (Cuvier, 1830), was caught at the southeastern coast of Gran Canaria Island, Canary Islands, northeastern Atlantic ocean. This is a Western Atlantic species, distributed in the southern Lesser Antilles and northern coast of South America, from eastern Colombia to Brazil. The most plausible hypothesis to explain this occurrence is the introduction through shipping, particularly of oil rigs.

Key words: non-native fish, introduction, Haemulidae, oil platforms, Western Atlantic species.

RESUMEN

Un ejemplar de roncador tropical, *Genyatremus cavifrons* (Cuvier, 1830), fue capturado en el sureste de la isla de Gran Canaria, islas Canarias, océano Atlántico noreste. Se trata de una especie característica del Atlántico oeste, que se distribuye por el sur de las Antillas Menores y costas del norte de Suramérica, desde el este de Colombia hasta Brasil. La hipótesis más plausible para explicar esta presencia es la posible introducción asociada al tráfico marítimo, particularmente al de plataformas petrolíferas.

Palabras clave: especie no nativa, introducción, Haemulidae, plataformas petrolíferas, especie del Atlántico oeste.

1. INTRODUCTION

The family Haemulidae comprises *ca.* 19 genera and 145 species of fish (ESCHMEYER & FRICKE, 2015; TAVERA *et al.*, 2012). The name of the family derives from the sound produced by the grinding of pharyngeal teeth. The diagnostic characters are: oblong, compressed, perchlike fishes to 75 cm total length. Head profile strongly convex in most species. Small to moderate mouth with thick often lips; chin with 2 pores anteriorly and, in all but 1 genus, a median groove. Teeth conical, in a narrow band in each jaw, the outer series enlarged but no canines. No teeth on roof of mouth. Posterior margin of sub-orbital not exposed; preopercle with posterior margin slightly concave and serrated; opercle with 1 spine. Branchiostegal rays 7. Vertebrae 26 or 27 (10 or 11 + 16). Dorsal fin continuous, with 9 to 14 strong spines and 11 to 26 soft rays. Pectoral fins moderately long; pelvic fins below base of pectoral fins, with 1 spine and 5 soft rays. Anal fin with 3 strong spines, the second often very prominent, and 6 to 18 soft rays; caudal fin emarginate to forked. Scales ctenoid (rough to touch), small or moderate, extending onto entire head (except front of snout, lips, and chin). The colour is highly variable, ranging from uniformly coloured to striped, banded, blotched and spotted. (LINDEMAN & TOXEY, 2003; FROESE & PAULY, 2015).

The family has a broad geographic distribution that encompasses contrasting ecological habitats (TAVERA *et al.*, 2012). Species of Haemulidae are nearly all from tropical and subtropical waters of the Atlantic, Indian and Pacific oceans. Fishes of shallow, nearshore waters, most marine, some brackish, and rarely freshwater. Many species are found on coral reefs and hard bottoms, while others are characteristic of sand and mud bottoms. Adults are typically inactive during day when they shelter near or under ledges; they disperse to feed on benthic invertebrates at night, particularly crustaceans and polychaetes. Schooling is present in many species, but may become less common in older individuals. Distinct pairing during breeding, producing pelagic eggs with no known parental care (BREDER & ROSEN, 1966).

In the Canary Islands, three species of Haemulidae are present: the African striped grunt, *Parapristipoma octolineatum* (Valenciennes, 1833), the Rubberlip grunt, *Plectorhinchus mediterraneus* (Guichenot, 1850) and the Bastard grunt, *Pomadasys incisus* (Bowdich, 1825), all common species in the Canarian waters (BRITO *et al.*, 2002). In this work, the occurrence of the Torroto grunt, *Genyatremus cavifrons* (Cuvier, 1830) is recorded, for the first time, in the Canary Islands and the Eastern Atlantic. The possible origin of this species in the Canaries is discussed.

2. MATERIAL AND METHODS

Data of recreational fishing proved useful instrumental in providing information about the presence and distribution of fish fauna. The fish was caught during a recreational angling, in Punta Gaviota (N 27°50'3.77"; W15°24'52.89"), southeastern coast of Gran Canaria Island, Canary Islands, northeastern Atlantic ocean, on October 2015. Depth 12-14 m, on a transition bottom between rocks and sand. Other species present in this location are: the parrotfish, *Sparisoma cretense* (Linnaeus, 1758), the black seabream,



Figure 1.- Specimen of *Genyatremus cavifrons* (Cuvier, 1830); (a) shape of head, (b) margin of the opercle, and (c) margin of the preopercle at angle are showed.

Spondylisoma cantharus (Linnaeus, 1758), the Azores chromis, *Chromis limbata* (Valenciennes, 1833), and the Canary damsel, *Similiparma lurida* (Cuvier, 1830). Unfortunately, the recreational fisherman did not provide the specimen; nevertheless, one of the authors could take some pictures of the fish. Identification of fish species from images is not always possible; but in this case, some key morphological characters could be determined. The species was identified following descriptions of LINDEMAN & TOXEY (2003) and TAVERA *et al.* (2011).

3. RESULTS

It was an adult specimen, total length *ca.* 25 cm and weight *ca.* 600 g. the body is ovate and compressed. Head small, with characteristic shape of *Genyatremus* (see TAVERA *et al.*, 2011, and Figures 1a, 2b), mouth moderately large; opercle without spines (Figure 1b), preopercle strongly serrate at angle (Figure 1c); dorsal fin high, with XIII spines (characteristic of *Genyatremus*, see LINDEMAN & TOXEY, 2003, and TAVERA *et al.*, 2011) (Figure 2a), the fifth spine the longest; anal-fin spines III, the second very prominent (Figure 3); caudal fin emarginate. Colour pattern is the same than that described by LINDEMAN & TOXEY (2003): body silvery with a yellowish cast; preopercular margin yellow; dorsal fin with silvery spines and a black margin; pectoral fins with a yellow-



Figure 2.- (a) Appearance of the dorsal fin, and (b) shape of head, slightly depressed above the eyes.



Figure 3.- Appearance of the anal fin showing three spines, the second very prominent.

ish tint; pelvics with a black posterior margin; anal fin yellowish; base of caudal fin yellowish, with a terminal black margin. These taxonomic characters together with the fact that there is no haemulid phylogenetically close to *Genyatremus* that can be found in the Canary Islands (TAVERA *et al.*, 2012; TAVERA pers. com.), led to identify the specimen as *G. cavifrons*.

4. DISCUSSION

The Torroto grunt, *Genyatremus cavifrons* (Cuvier, 1830) is distributed in the Western Atlantic ocean: southern Lesser Antilles and northern coast of South America, from eastern Colombia to Brazil (LINDEMAN & TOXEY, 2003). Previously, this species was known as *G. luteus* (Bloch, 1790), but recent phylogenetic molecular and morphological studies reclassified it to *G. cavifrons* (see TAVERA *et al.*, 2011, 2012). *G. cavifrons* is a sister species to the Eastern Pacific clade *G. pacifici* (Günther, 1864) and *G. dovii* (Günther, 1864). The maximum total length for this species is 37 cm (CERVIGÓN, 1993), common total length is 25 cm, and maximum weight is 800 g (CERVIGÓN *et al.*, 1992). The species is mainly found over soft bottom habitats, with sand or mud substrate, to depths of 40 m. Typically, in shallow brackish waters, like estuaries and adjacent areas, sometime caught in marine waters. *Genyatremus* is linked to freshwater environments, small juveniles have been caught inside the mouth of the Orinoco river (TAVERA pers. com.). Feeds on crustaceans and small fishes, but studies on feeding ecology pointed that *G. cavifrons* is an opportunistic species, which feeds on the more abundant items occurring in the environment. Caught throughout its range, mainly with seines and trawls, in some areas constitutes an important food resource, and marketed mostly fresh (COURTENAY & SAHLMAN, 1978; LINDEMAN & TOXEY, 2003; DA SILVA *et al.*, 2005).

The most plausible hypothesis to explain the occurrence of *G. cavifrons* in the Canary waters is the introduction through shipping, particularly of oil rigs. The fish was caught 2 km southward the industrial port of Arinaga (southeastern coast of Gran Canaria Island), where oil and gas platforms dock. The arrival of fish species from the tropical eastern Atlantic and the western Atlantic is not a new phenomenon in the Canary Islands (see BRITO *et al.*, 2005); e.g. the African hind, *Cephalopholis taeniops* (Valenciennes, 1828) (BRITO *et al.*, 2011), the African brown snapper, *Lutjanus dentatus* (Duméril, 1858) (GARCÍA-MEDEROS & TUSET, 2014), the Stippled spoon-nose eel, *Echiophis punctifer* (Kaup, 1859) (ESPINO *et al.*, 2014), the African sergeant *Abudefduf hoefleri* (Steindachner, 1881) (TRIAY-PORTELLA *et al.*, 2015; ESPINO *et al.*, 2015), *Hypleurochilus pseudoaequipinnis* (Bath, 1994) (FALCÓN *et al.*, 2015), the blue tang surgeonfish, *Acanthurus coeruleus* Bloch & Schneider, 1801, (TRIAY-PORTELLA *et al.*, 2015), among others. Some authors have suggested that many of these tropical affinity species have been introduced via ballast waters or associated with the fouling of the vessels or as drifters associated with platforms structures, where they find food and refuge, taking advantage of the slow sailing (BRITO *et al.*, 2011; PAJUELO *et al.*, 2015; TRIAY-PORTELLA *et al.*, 2015; FALCÓN *et al.*, 2015). For example, PAJUELO *et al.* (2015, submitted) have demonstrated that the appearance of many tropical and subtropical fish species in waters of Gran Canaria Island is related to the heavy overseas traffic of oil platforms, with destination to-

wards the Port of Las Palmas (docked). This includes also the adjacent Bay of Las Palmas (anchor area) and the auxiliary (when overbooking) Port of Arinaga (docked) located 16 nm down south on the east coast of the island.

Up today, it seems that the success of the colonization processes of the non-native species is limited; i.e. few species have got breeding and spreading in the littoral waters of the Canary Islands. If the introduction of exotic fish species goes on, we can expect changes, not only, in the fish biodiversity, but at community and ecosystem levels too. Specially, taking into account that the sea water temperature is rising in the Canaries.

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